

# **FEASIBILITY STUDY**

**James City  
Access Management, Operational and Safety Improvements  
to US 70 from End of Freeway at US 17/NC 55 near New Bern  
to the Proposed Havelock Bypass (R-1015).**

**Craven County**

**Division 02**

**FS-0802B**



**Prepared by the  
Program Development Branch  
N. C. Department of Transportation**

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**R. N. Prince  
Feasibility Studies Engineer**

A handwritten signature in dark ink, appearing to read "Derrick W. Lewis", is written over a horizontal line.

**Derrick W. Lewis, P.E.  
Feasibility Studies Unit Head**

**01/26/2012  
Date**

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**I. General Description**

This feasibility study describes access management, operational and safety improvements to US 70 from the end of freeway at US 17/NC 55 South to the proposed Havelock Bypass (R-1015), a distance of approximately 10.8 miles. The project location is shown on the Location Map.

This study assesses the engineering and financial feasibility of upgrading US 70 to a freeway thru the project area. The projected traffic volumes along US 70 indicate that a 4-lane freeway throughout the majority of the corridor will function at a LOS D or better thru the 2035 design year with the exception of the section through James City. The James City section of US 70 from the end of the freeway at the US 17/NC 55 interchange to the proposed Taberna Way interchange will need 6 lanes (3 per direction) to accommodate the projected design year traffic. Except for service roads and interchanges, the proposed improvements to US 70 would likely be contained within the existing right of way.

This is the initial step in the planning and design process for this project and is not the product of exhaustive environmental or design investigations. The purpose of this study is to describe the proposed project including cost, and to identify potential problems that may require consideration in the planning and design phases.

**II. Background**

The purpose of this project is to improve the mobility of the US 70 Corridor in this area. It is also likely that roadway safety would be improved by eliminating traffic conflict points.

US 70 is classified as an Principal Arterial in the North Carolina Functional Classification System and is also listed in the NC US 70 Corridor Commission Projects. Craven County Thoroughfare classifies US 70 under Rural Functional Classification as a Principal Arterial. The New Bern Thoroughfare Plan classifies US 70 as a freeway/expressway Principal Arterial in the Municipal Thoroughfare Plan. The entire corridor is included in the National Highway System (NHS), the North Carolina Intrastate System, and the National Military Highway System, also known as STRAHNET. The NCDOT Strategic Highway Corridor Vision Plan recommends that this portion of US 70 be upgraded to a freeway.

The importance of this corridor has also been recognized in the Rural Prosperity Task Force Report, as one of three corridors statewide that should be improved to assist economic development in the primarily rural areas. US 70 is one the primary east-west corridors traversing Eastern NC. The corridor is the major facility connecting the Raleigh, Smithfield, Goldsboro, Kinston, Havelock, and Morehead City areas. With a major deep-water port located in Morehead City, the corridor is heavily used for freight movement. Additionally Cherry Point Marine Corps Air Station in Havelock is located within this section of the US 70 corridors.

The development along US 70 is primarily commercial with some residential property with the majority of the access to adjacent properties provided through the use of parallel service roads and intersections.

### **III. Traffic and Safety**

There are four existing traffic signals on US 70 within the proposed study limits located at the intersection of SR 1167 (Williams Road), SR 1131 (Airport Road), Taberna Way and SR 1116 (Thurman Road).

The current year Average Daily Traffic (ADT) along US 70 between US 17/NC 55 interchange and the proposed Havelock Bypass is between 33,600 and 58,900 vehicles per day (vpd) and is projected to be between 58,900 and 106,500 vpd in the 2035 Design Year (DY). Truck traffic along US 70 is estimated to be up to 6% of the ADT.

If no improvements are made, US 70 will operate at a Level of Service (LOS) F in the 2035 design year. However, if the recommended freeway improvements are implemented, US 70 should operate at a LOS D or better through the 2035 design year.

Between October, 2008 and September, 2011, 501 accidents occurred within the project limits. There were 3 injury accidents, 364 property damage only accidents, 131 non-fatal injury accidents, and 6 fatal accidents as a result of these incidents. The total accident rate for this portion of roadway is 125.09 crashes per 100 million vehicle miles of travel (crashes/100mvm), which is higher than the 2007-2009 statewide rate of 110.42 crashes/100mvm for four-lane divided rural US routes with no control of access. The Fatal accident rate for this section of US 70 is 1.5 crashes/100mvm, which is higher than the 2007-2009 statewide rate of 1.15 crashes/100 mvm.

### **IV. Description of Alternative**

The studied alternative would improve US 70 to a freeway from the US 17/ NC 55 interchange to the proposed R-1015 (Havelock Bypass), a distance of approximately 10.8 miles. The project location is shown on the attached Location Map.

This study evaluated upgrading US 70 to freeway operations by providing interchanges at key intersections and parallel service road improvements where necessary.

The cost estimates include service road extensions and interchange upgrades throughout the project.

The details of the proposed sections are as follows:

**Section 1** proposes a 6-lane freeway section with a 22-foot median and concrete barrier through James City from the end of the freeway at the US 17/NC 55 interchange to the Grantham Road intersection, a distance of 1.8 miles. The improvements proposed in this section also include grade separations of Williams Road (SR 1167) and Airport Road (SR 1131) and use the existing parallel service roads as collector distributors with ramps to access US 70. It also includes upgrades to SR 1113 (Old Cherry Point Road), a multilane extension of Williams Road, and additional network improvements as required to accommodate traffic demand. (See Figure 1).

It is anticipated there could be as little as zero (0) residential and four (4) business relocations as a result of the proposed improvements in this section. The total cost of these improvements is estimated to be \$66,000,000.

Construction	\$40,000,000
Right-of-Way	\$25,000,000
Utilities	\$1,000,000
Estimated Section Cost	\$66,000,000

**Section 2** would upgrade existing US 70 to a freeway from Grantham Road to Blades Road, a distance of 1.5 miles. The improvements in this section include a tight diamond interchange at Taberna Way and service roads in the area to facilitate access (See Figure 2). In addition, this project proposes to add a 3<sup>rd</sup> lane in each direction of US 70 from the end of Section 1 to the proposed interchange ramps at Taberna Way. (See Figures 1 & 2).

It is anticipated there could be one (1) residential and nineteen (19) business relocations as a result of the proposed improvements in this section. The total cost of these improvements is estimated to be \$45,200,000.

Construction	\$20,500,000
Right-of-Way	\$24,700,000
Utilities	\$0*
Estimated Section Cost	\$45,200,000

**Section 3** would upgrade existing US 70 to a freeway from Blades Road to southeast of Thurman Road, a distance of approximately 1.1 miles. The improvements in this section include a tight diamond interchange at Thurman Road and service roads within the area to provide access (See Figure 2).

It is anticipated there could be twenty-seven (27) residential and twelve (12) business relocations as a result of the proposed improvements in this section. The total cost of these improvements is estimated to be \$45,000,000.

Construction	\$22,400,000
Right-of-Way	\$22,600,000
Utilities	\$0*
Estimated Project Cost	\$45,000,000

**Section 4** would upgrade existing US 70 to a freeway from end of Section 3 southeast of Thurman Road to northeast of Riverdale Road, a distance of approximately 2.4 miles. This proposed upgrade includes a tight diamond interchange at Camp Kiro Road and provision of service roads needed to access area businesses and residents. (See Figure 3).

It is anticipated there could be twenty-eight (28) residential and three (3) business relocations as a result of the proposed improvements in this section. The total cost of these improvements is estimated to be \$42,100,000.

Construction	\$24,900,000
Right-of-Way	\$17,200,000
Utilities	\$0*
Estimated Project Cost	\$42,100,000

**Section 5** would upgrade existing US 70 to a freeway from just northeast of Riverdale Road to southeast of Fisher Ave, a distance of approximately 0.8 miles (See Figure 4). This upgrade includes a partial cloverleaf interchange at Fisher Avenue.

It is anticipated there could be five (5) residential and one (1) business relocations as a result of the proposed improvements in this section. The total cost of these improvements is estimated to be \$15,700,000.

Construction	\$12,700,000
Right-of-Way	\$3,000,000
Utilities	\$0*
Estimated Project Cost	\$15,700,000

**Section 6** would upgrade existing US 70 to a freeway from southeast of Fisher Avenue to the proposed Havelock Bypass, a distance of approximately 2.4 miles (See Figure 5). The improvements in this section include a diamond interchange with loops in two quadrants at Stately Pines Road (SR 1106) and service roads in the area to facilitate access. In addition, this section includes a multilane widening of Stately Pines Road as well as an extension of Stately Pines Road to the southwest.

It is anticipated there could be one (1) residential and zero (0) business relocations as a result of the proposed improvements in this section. The total cost of these improvements is estimated to be \$33,300,000.

Construction	\$26,100,000
Right-of-Way	\$7,200,000
Utilities	\$0*
Estimated Project Cost	\$33,300,000

Under the proposed improvements to upgrade these sections of US 70 to a freeway, it is anticipated there could be sixty-two (62) residential and thirty-nine (39) business relocations. The total cost of this alternative is estimated to be \$247,300,000.

Construction	\$146,600,000
Right-of-Way	\$99,700,000
Utilities	\$1,000,000*
Estimated Project Cost	\$247,300,000

\*Note: The utility impacts along most of the corridor are anticipated to be light except for the James City area, because the majority of the construction is focused on upgrading intersections to interchanges and construction of service roads.

## **V. Community Issues**

A detailed investigation of community issues was not conducted for this feasibility study. However, the following should be considered during the final design process: Pilgrim Chapel M. B. Church is located at the intersection of Elder St. and Old Cherry Point Rd., Jones Chapel AME Zion Church, Meadows Cemetery, Coastal Carolina Regional Airport, Croatan National Forest, Croatan Presbyterian Church and Tom Haywood Store.

## **VI. Environmental Issues**

A detailed environmental study was not conducted for this feasibility study. However, existing information available for this project area has been screened for environmental and historic concerns. Minimal environmental and historic impacts are anticipated.

There is no indication of threatened or endangered species in the area based on available GIS data maintained by the National Heritage program.

## **VII. Additional Comments**

The Coastal Carolina Regional Airport, The Proposed Havelock Bypass (R-1015), which is in its final design phase and The US 70 Corridor Commissions Study should be considered during the final design phase.

As part of this study, we also evaluated spot improvements which closed some median openings and converted many of the existing full movement median openings into directional crossovers. However, this option was not investigated in detail because it is not anticipated to accommodate the 2035 design traffic along the corridor. Table 1 attached provides a preliminary construction cost estimate of the proposed directional crossover improvements in this area. These directional crossovers would not be considered a long term solution and are not recommended at this time.

## **VIII. Recommendations**

It is recommended that US 70 be upgraded to a freeway from the end of the existing freeway at US 17/NC 55 near New Bern to the proposed Havelock Bypass (R-1015). Throughout most of the corridor, a four lane freeway should be sufficient to accommodate the projected traffic. However, the James City area will require additional widening to provide a six lane freeway in order to accommodate the projected 2035 traffic. Along with converting key intersections into interchanges, service roads will be needed to maintain access to businesses and residences along the corridor. The anticipated costs of converting US 70 in this area to a freeway as recommended is \$247,300,000 with \$146,600,000 in construction, \$99,700,000 in right of way and \$1,000,000 in Utility Relocation.

**Table 1**  
**Interim Directional Crossover**  
**Improvements**

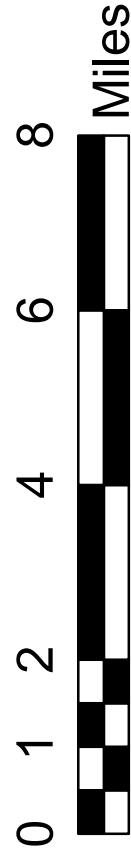
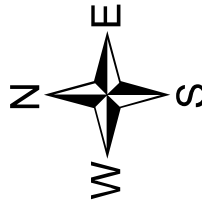
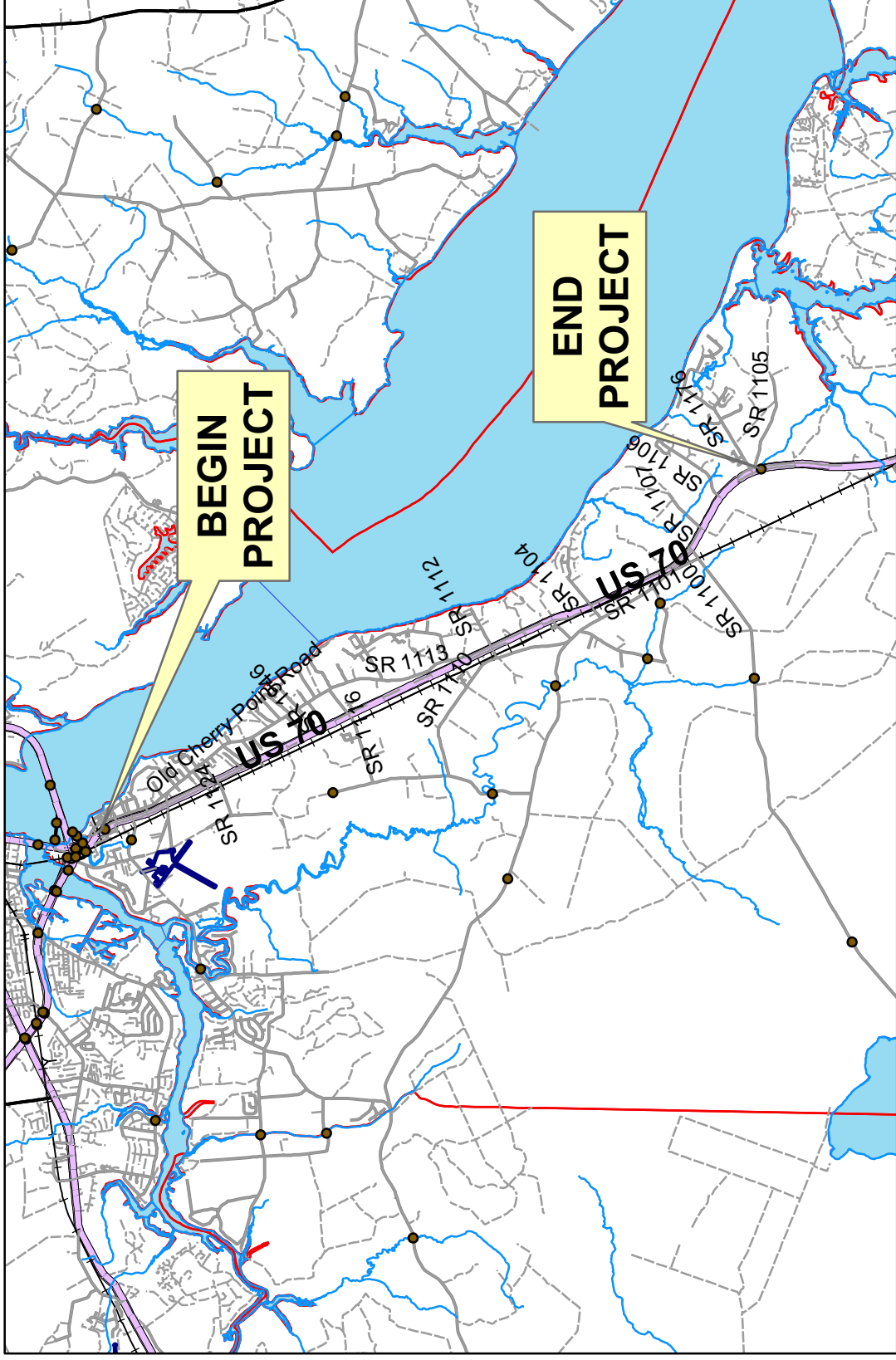
<b>Section</b>	<b>Description</b>	<b>Construction Costs</b>
<b>S-1</b>	<b>EB Only Reverse Directional X-Over (885' South of Carolina Pines Blvd)</b>	<b>\$300,000</b>
<b>S-2</b>	<b>EB Only Directional X-Over &amp; Median Closure (Carolina Pines Blvd)</b>	<b>\$225,000</b>
<b>S-3</b>	<b>WB Only Reverse Directional X-Over (1,172' North of Carolina Pines Blvd)</b>	<b>\$300,000</b>
<b>S-4</b>	<b>Directional X-Over (Stately Pines Road)</b>	<b>\$500,000</b>
<b>S-5</b>	<b>Directional X-Over (Flanners Beach Road)</b>	<b>\$500,000</b>
<b>S-6</b>	<b>Reverse Directional X-Over (Catfish Lake Road)</b>	<b>\$600,000</b>
<b>S-7</b>	<b>Directional X-Over (4,747' South of Fisher Avenue)</b>	<b>\$500,000</b>
<b>S-8</b>	<b>Remove WB Rt.Turn Lane, Access Closure North Side 2,287' South of Fisher Avenue</b>	<b>\$35,000</b>
<b>S-9</b>	<b>Directional X-Over (Riverdale Road)</b>	<b>\$500,000</b>
<b>S-10</b>	<b>Reverse Directional X-Over (River Bluffs Drive)</b>	<b>\$600,000</b>
<b>S-11</b>	<b>Directional X-Over (Camp Kiro Road)</b>	<b>\$500,000</b>



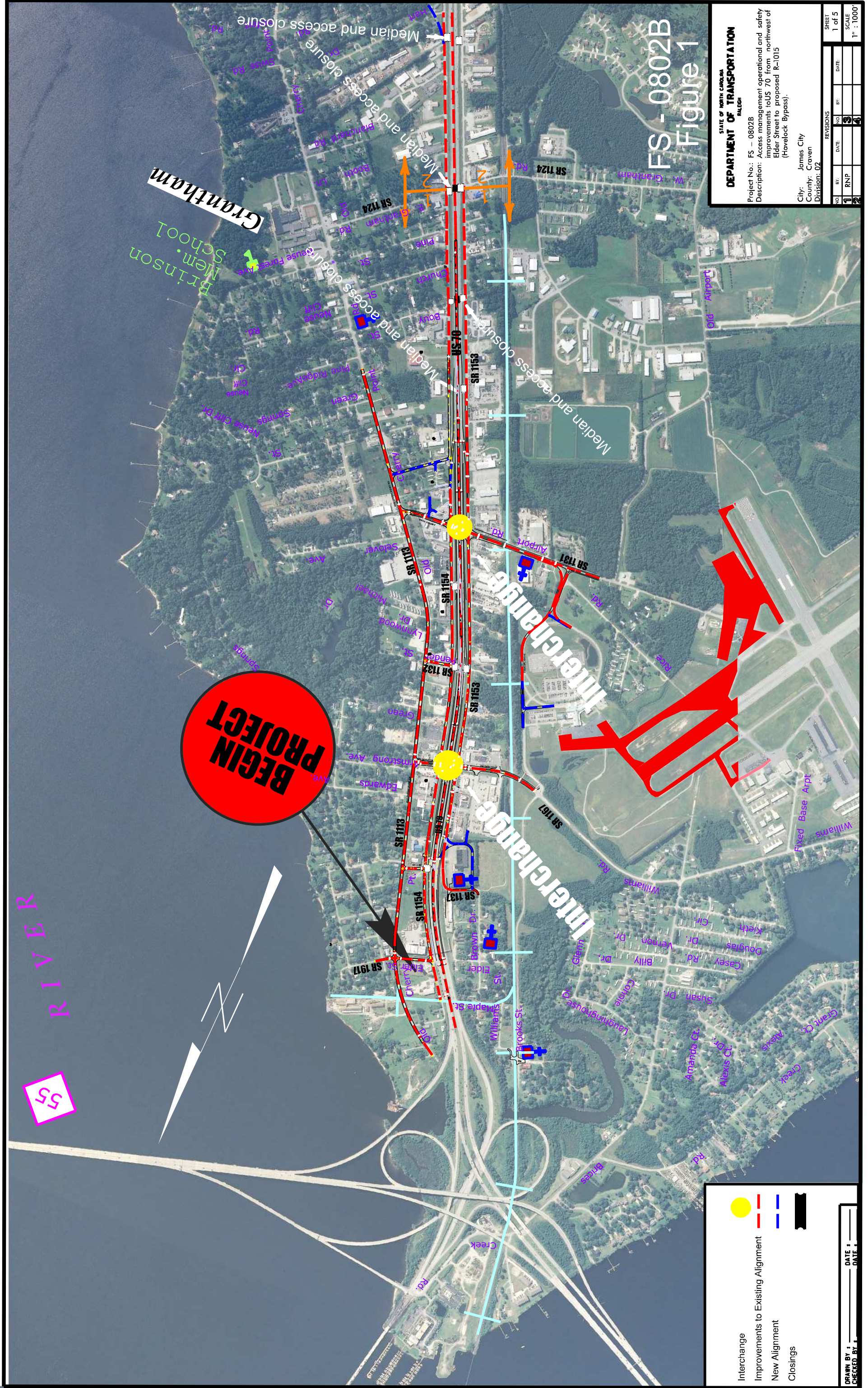
**Interim Directional Crossover  
Improvements (Continued)**

<b>S-12</b>	<b>Reverse Directional X-Over (1,865' North of Camp Kiro Road)</b>	<b>\$600,000</b>
<b>S-13</b>	<b>Directional X-Over (SR 1174)</b>	<b>\$500,000</b>
<b>S-14</b>	<b>Directional X-Over (2,830' South of Thurman Road)</b>	<b>\$500,000</b>
<b>S-15</b>	<b>Access Closure on North Side (1,080' North of Thurman Road)</b>	<b>\$30,000</b>
<b>S-16</b>	<b>Directional X-Over (Blades Road)</b>	<b>\$500,000</b>
<b>S-17</b>	<b>Remove EB Rt Turn Lane, Access Closure S.Side (935' North of Blades Road)</b>	<b>\$35,000</b>
<b>S-18</b>	<b>Service Road Extension (Eastern Carolina Nissan to Craven Co Motor Sports)</b>	<b>\$525,000</b>
<b>S-19</b>	<b>Directional X-Over (Garner Road)</b>	<b>\$500,000</b>
<b>S-20</b>	<b>Directional X-Over (Already Constructed) (Grantham Road)</b>	
<b>S-21</b>	<b>Remove EB Rt Turn Lane, Access Closure Both Sides (Bouy Street)</b>	<b>\$50,000</b>
<b>S-22</b>	<b>Remove EB Rt Turn Lane, Access Closure S.Side (1,625' South of Airport Road)</b>	<b>\$35,000</b>
<b>TOTAL</b>		<b>\$7,835,000</b>

## Location Map







FS - 0802B  
Figure 1

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
HALEIGH

Project No.: FS - 0802B  
Description: Access management operational and safety improvements to US 70 from northwest of Elder Street to proposed R-1015 (Havelock Bypass).

City: James City  
County: Craven  
Division: 02

REVISIONS				SHEET	
NO.	BY	DATE	NO.	DATE	1 of 5
1	RNP		3		SCALE
2			4		1" = 1000'

- Interchange
- Improvements to Existing Alignment
- New Alignment
- Closings

DRAWN BY :  
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DATE :















END PROJECT

FS - 0802B  
Figure 5

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
HALEIGH

Project No.: FS - 0802B  
Description: Access management operational and safety improvements to US 70 from northwest of Elder Street to proposed R-1015 (Havelock Bypass).

City: James City  
County: Craven  
Division: 02

REVISIONS				SHEET	
NO.	BY	DATE	REASON	NO.	OF
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1" = 1000'

NAD 83/NSRS  
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SR 2020

SR 1101

SR 1100

SR 1107

SR 1106

SR 1176

SR 1105

SR 1105

Median and access closure

Median and access closure

Median and access closure

Median and access closure

Median and access closure

- Interchange
- Improvements to Existing Alignment
- New Alignment
- Closings

DRAWN BY: DATE: 1  
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